

BTPT 3, 1

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You will need this basic information before our next mission, which is a short trip into Wonderland. So without further ado, I'll hand you over to Conan for the rest of his lecture:

"Darragdomians make maps. I know it, and you know it [or at least you do if you've been paying attention], and everybody knows it. But what many people don't know, is what maps really are, and what they have to do with mirrors and rabbits. That's what I'm going to explain here.

"The white rabbit that we Darragdomians wear as a button is a symbol of analogical language, in other words a symbol of symbolism. The white rabbit in folklore is the trickster and the shape shifter, associated with magic and illusion, and in the Wonderland of the unconscious mind he partly stands for synesthesia [a merging of the senses. Some experience this consciously on LSD]*[see footnote].

Synesthesia is a shape shifting of input that can change one thing to another; sound to light, light to smell, tactile input to vision, and so on, but this superbunny also turns digital patterns into analog ones. This is important because all your sensory information comes in as simple binary input of frequencies; it's just code. It can be interpreted as color or sound or temperature, or all three, because all these things correspond. That's why 'red' can mean 'hot' as well as 'danger' or 'brothel'. Analogical language is a kind of unconscious esperanto. Looking at the color red raises your blood pressure, blue lowers it.

"All maps are pictures representing the objects and events that we call 'reality'. They are a copy of information in a compressed form based on pattern recognition and symbols. You need a whole square mile to convey all the information of every kind contained in a real square mile, but you can get enough information onto the tiny screen of a GPS to use it to find your way in the real version. Better maps convey more information while still remaining readable because they have good analogical symbols; small signs that stands for a lot of information. Obviously, the more information you can pack into a memory map, the better your associative memory of the represented events and objects in the real world will be. All thought and all memory relies on association, so this is important.

"To make a map, we need symbols representing things, [red square = brothel, blue square =

police station, and so on]. The symbols the Darragdomians use are compiled from a basic algorithm. Being fond of mnemonics, they call it 'SCRAM' –Shape, Contrast [including gradient, amplitude and size], Repetition [frequency], And Movement. Combinations of these factors make up pictures [symbols] and they are the basics that allow the mapping of all events occurring in spacetime involving matter & energy. Fortunately these are the only kinds of events that human beings living on a planet have to deal with." [Yet. It would be just like you buggers to invent matter transporters and render this explanation inadequate.]

"Your senses look at Reality and you see and hear and smell roads and grass and buildings and people and animals and bugs and stuff, but your brain doesn't receive or understand information like that. You might be wooping it up at a gig somewhere, but all the Darragdomians get are patterns in binary; nerve cells firing or not firing in response to the frequencies of light photons coming through your eyes, heat radiation through your skin, sound frequencies and rhythms through your ears, the amplitude of a sound wave, the size and shape of pheromones up your nose or enzymes in your mouth, the contrast in pressure that you feel textures and touches with, and so on. The Orlians and Vulcans don't speak binary; I mean hell, who does these days, [apart from the mainframe at IBM and some of its friends]? So the Darragdomians translate it first into something they themselves understand; these pictures that associate both with the patterns and with chemicals they must send, along with whatever memories are associated with that picture, to the other sections [each chemical is one that only a particular network can understand.]

"This language of chemical messages renders the input universally understandable, although all sections will be thinking or doing different things in response to it. At the gig, the Gnomes and Cakdons will be receiving the chemical signals to keep generating the energy you need to stay awake and dancing, remind you to go to the toilet, help you avoid spilling your drink and notice who might fancy you. The Vulcans will be reminding you that your beer's nearly run out and you only have the money for two more, one if you need to buy condoms, and look what time it is already. The Darragdomians will be getting inspired by the show and storing ideas for future creativity, and the Orlians will be wishing they could have a go on That Guy's Stratocaster and thinking how you could get talking to the band in order to do so.

"The pictures that all new incoming images are compared to are stored in eidetic memory; the oldest, deepest kind of unconscious memory that you have, and they relate to what is beneficial and not beneficial with regard to your biological and mental survival needs. They have had a long, long time to evolve. They are analogous with both events and the chemical states relevant to those events [the hormone packets]. There are eidetic pictures representing the epitome of each emotion; joy, sadness, love, awe, fascination...and for all these pictures, there are multiple links of association; with colors, with sounds, with smells... All this is your 'reality map'.

In a crisis, or in any new and unknown situation, you can get a very fast basic grasp of things from the Darragdomians' point of view even before the detailed information is in. You probably call it a 'gut response' or 'intuition'. It's much faster to access than the Vulcans and can be highly accurate with regard to your safety needs, which is why your ancestors didn't get eaten.

"You see, the Darragdomians didn't make the original eidetics. Your own emergence, the whole of evolution, of the universe even, made those. They are imposed by the nature of your biological platform, and they are the best, because when a mammal's history was for a long time all about stuff like eating or not getting eaten, if you were an archetypal memory byte hacking its way into permanence, you were either the best or you died like the rest. Things like the awareness that 'darkness hides predators' were things that got passed on. Things like an impulse to 'play with that long orange and black stripy thing', didn't.

"Unconscious processing [and unconscious learning] is much faster than conscious processing because you don't need a user interface. All your brain needs to do is compare incoming input to eidetics, and whatever matches up is what we work with. From there, we check associations, also largely unconsciously, although they can surface into conscious thought whenever you need to pay attention.

"When you don't need to pay attention at all, your mind often engages in the art of reflection, or 'introspection' as it used to be known before it got called 'aimless dreaming' by the Margarets of this world and 'just tripping out staring' by the Floyds. You do this mainly when you're sleeping though. When a new experience comes in during waking time, the Darragdomians don't have time to file everything right away, so they use RAM and they shove bits of it all just anywhere, temporarily, in short term and working memory, into any folders that still have spare room. By bedtime, their office looks like a teenager's bedroom. But when you go to sleep, they work hard defragmenting the drive and clearing the backlog. Everything gets reassembled and filed expediently alongside its most relevant associations for easier speed and accuracy of recall. The more new experiences you have, the more sleep [or meditation] you need for them to finish that work, or you'll take longer to learn. Anything that the Darragdomians don't have enough information about is run at a higher level —you perceive that as dreaming- but all the rest passes through quietly to its long-term destinations when you're in deep sleep; at the deep end of the relaxation response. As they defrag stuff, you're learning, but they're doing all the work for you. That's why you sometimes wake up one morning with a clearer perspective and more associations within a certain problem. That was the Darragdomians, doing their stuff while you slept.

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"Anyway, to summarise, the Darragdomians work out what's going on 'out there' for you by comparing patterns of information in the input to pictures in their maps. How do they associate patterns to pictures? They follow the white rabbit.

'Following the rabbit' means moving down the 'hole' from the concrete to the abstract, [or coming back again], looking at what 'matches up with' what. On the outside, you see a large greasy person behaving in a slovenly, greedy way over their dinner and on the inside, we have a picture of not only a person but also a pig...-Right.

"To compare patterns with pictures and associate them with other pictures, though, we must first be able to 'see' them. Like the firing of electrons create a picture on a CRT screen, the firing of neurons must create a recognizable picture in the mind's mirror. That's the looking glass, Alice [or was it Neo?] –So let's poke our finger into it...

...Whatever you think you know about the physics of mirrors, forget everything. The only things that matter in Wonderland are the facts that mirrors can provide an image and they can show a reflection [a copy of something]. Oh, and that you need a lot of them; the more the merrier, up to a point, to give an accurate reflection from all angles. There's not room for many mirrors at all in sections 4 and 5 of the ship [which is why 'front loaders' can't empathise or learn anything the easy way], but some parts of sections 3 and 6 are veritable halls of mirrors. The mirrors are called, helpfully, 'mirror neurons' in the brain and they do all the things that you'd expect —they can reflect, they provide an image, and they can show a copy of something, like a photograph or a movie; any object or any event held up to or projected onto them. Mirrors in Wonderland are different though, because of course we can step right through them and out the other side...just like Alice [or was it Bob?]

"Imagination' means "the creation of images", and imagination projects all the images onto the mirrors —both from the incoming data and from the maps already in memory. This is the nature of perception: we constantly 'imagine' Reality -what is out there in the real world- very accurately, the pictures match those of previous experience, and there it is, in the 'mind's eye', a representation of what's 'out there'. All awareness is imagination. We look at a cat and we imagine a cat. But it can also work the other way round...we can create images on the mirrors by projecting mixtures of our memory associations, from the 'inner database'. That's how we recall stuff, and it's also how we make stuff up. [We can also look at a cat and imagine [recall] it doing something it did last week or [project] something it might do in the future.]

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"But mirrors are useful for even more than association comparisons. As I said, we can step right through them, like Alice [or was it Eve?]

"Mirrors give us empathy. When an event 'out there' of somebody doing something appears on the 'inner screen', the Darragdomians can send the relevant chemicals around to enable you to experience a low-resolution copy of the other person's mind-state, enabling you to relate optimally to the situation of your attention. This is one function of empathy; copying for learning. If we wish to learn a skill and we 'take a copy' [make a memory] of the adept's mindstate as well as the procedure, we will be able to practise it in our minds by simply looking inward instead of needing the original. If we use our imagination to project pictures of the event, imagine ourselves in first person action taking part, and then relax, allowing defragging and association to take place, that's the best way to learn super fast. But empathy is also a gift that can enable you to achieve non-verbal communication with close allies, have a much deeper understanding of situations in general and interact in deeper ways that are more likely to be beneficial, like bonding.

Empathy is one of your superpowers. It is not telepathy. Nor is it sympathy [which is it's sentimental equivalent]. Sympathy feels sorry for, only because it cannot feel empathy with. Telepathy is about reading or transmitting verbal thoughts. Empathy is about reading or transmitting emotions and states of mind. You will know how someone is feeling because you will experience an echo –a lower-strength, or compressed, mirroring- of their brain chemistry. The good news is that you can send a message back. If you deliberately adopt the brain chemistry most beneficial in each particular circumstance, others who are present will begin to mirror that, as long as they have enough Darragdomians on their crew. People may not notice they are doing this consciously, but that's fine. They don't have to hang around if they don't like it. You don't even need to try consciously to adopt the most beneficial brain chemistry either; all that stuff happens automatically if you just give the Darragdomians what they need -examples. Some of your most uplifting movies and music release those hormones too, and mirror neurons will reproduce whatever they see and hear. If you want a courageous crew, show them courage. If you want daring explorers, show them films of daring explorations. If you want any skill, including high quality peaceful interaction, show them examples of people doing it. And if you want genuine love and respect, show them that too. I know how difficult it can be to find examples sometimes...but if we have enough beneficial input we'll become a source of them ourselves. We'll be able to imagine beneficial ways to interact and then enact and project them via the looking glass. We'll become filmmakers instead of projectionists.

A useful bit of Reality to know about is that wherever someone has the ability of empathy and is able to maintain beneficial behavior, there can never be conflict. In that sense, mirror neurons really are your magic wand. And finally, they're pretty magical in another sense too...

"They animate imagination. Memories or thoughts of dry facts have no emotional weighting save that of our desire to remember them and our interest in them. But memories and thoughts of real life experiences cannot come dry, because Reality doesn't do that. So we attach hormone packets to our imaginings too, and make them important or unimportant by this 'weighting'. Consequently each learning experience creates a wave of beneficial chemicals, from stress to relaxation —or will if your ship is in good form. During learning, using those chemicals, we build bridges across the gap between the known and the unknown; between cells that fire together; between one side of the looking glass and the other; between the rabbit hole and what lies beyond it. This is how thoughts can become reality; how a bridge can be built between the abstract intent to create a symphony, the information that will go in that symphony, the ability to write it down and pass it on, and the real concrete world of musicians, pianos and orchestras. Imagination, the Ghost, a mere reflection in a mirror, is made flesh and animated by the process of emergence. That process is how you are able to empathize, learn, remember, bond, understand, and be creative."

Because your mind is a bottom-up system, we're going to start exploring at the bottom of the hole. So get your hard hat and meet me at the beginning of the next chapter.

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*Footnote: Remember those blotters that used to have white rabbits on them? Very apt.